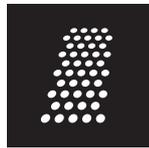




PHOTOS MAY SHOW OPTIONAL OR CUSTOMISED EQUIPMENT.



Double basic line



Dots



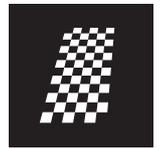
Dot'n line



Longflex



Edgeflex



Chess

## THERMOPLASTIC EXTRUSION AND SCREED APPLICATION WITH RIB FUNC

The BM 3000 series provides you with a variety of high capacity line marking machines designed for large scale jobs such as marking highways, motorways or airport runways.

The material tank capacity can be up to 445L. The possibility for the large material capacity naturally gives fewer stops during the day for refilling.

The BM 3000 has a two-seat slidable drive and operator section for flexible working on the left or right side.

The thermoplastic Borum Dot'n line extruder can apply single and double lines of 5 – 50 cm width depending on the set-up. The extruder may be used for the application of flat lines, profiled lines, dots and a combination of dots and lines.

# KNOWING THE BM 3000

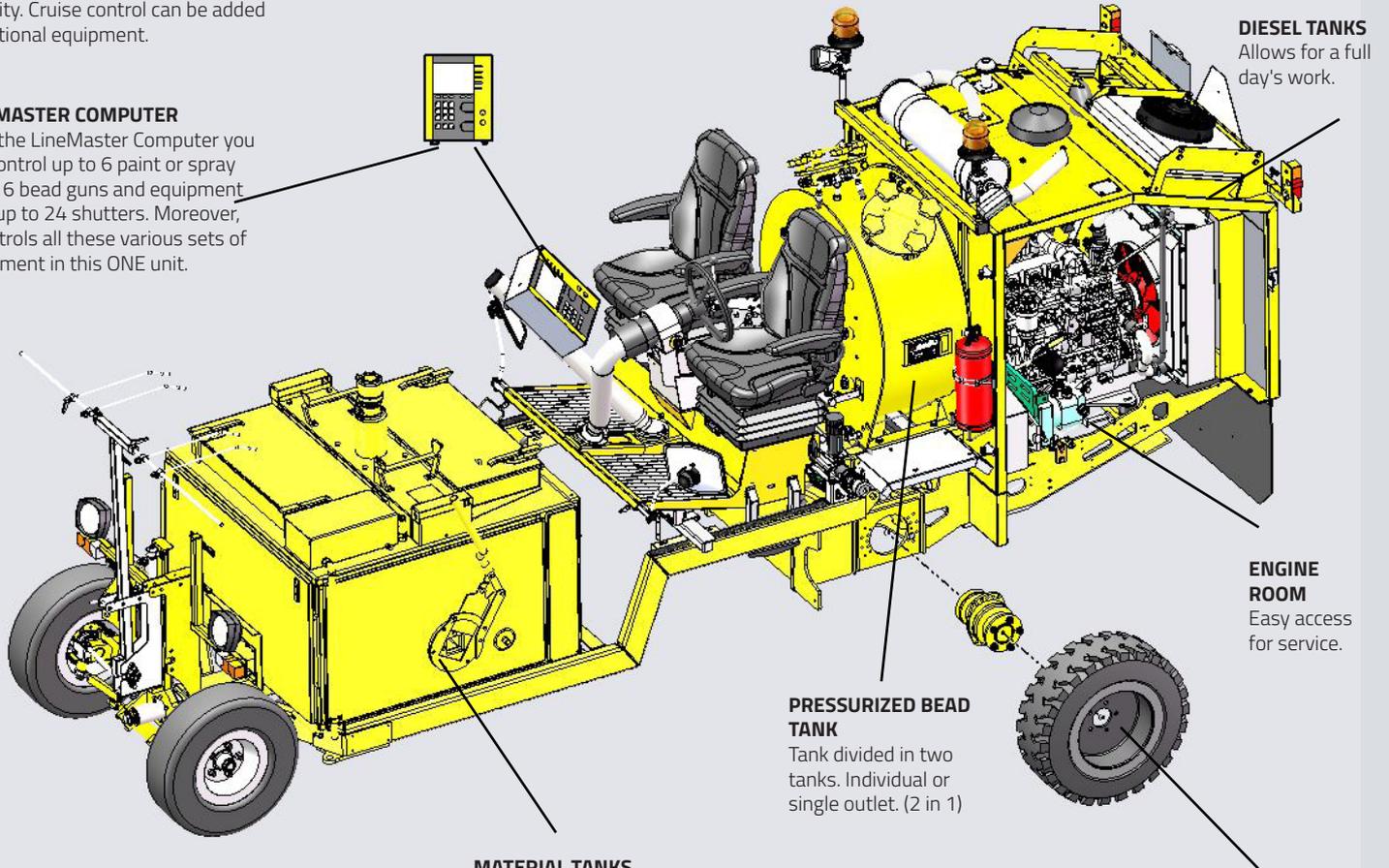
## OPERATOR SECTION

Quick and easy change from side to side for marking left and right. Dual torque steering - good directional stability. Cruise control can be added as optional equipment.

## LINEMASTER COMPUTER

With the LineMaster Computer you can control up to 6 paint or spray guns, 6 bead guns and equipment with up to 24 shutters. Moreover, it controls all these various sets of equipment in this ONE unit.

## FULL REAR VIEW



## CHASSIS

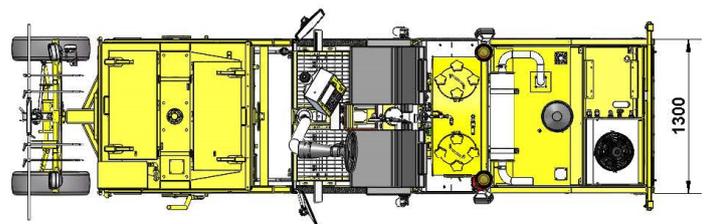
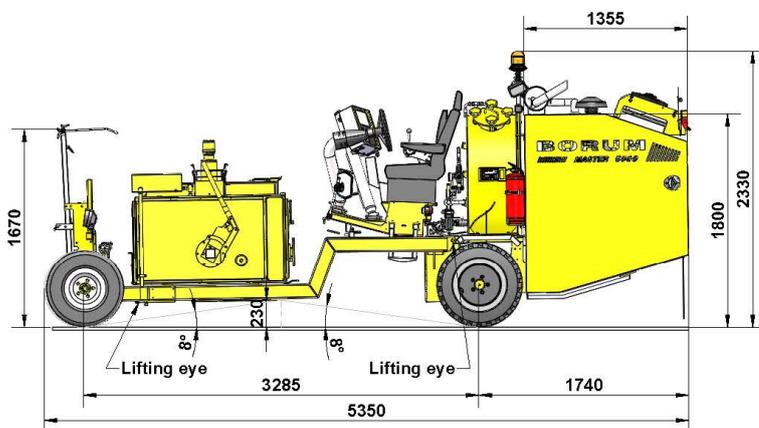
Solid double-frame construction

## MATERIAL TANKS

The possibility of an extra large material tank for major works ensures the most efficient workday and fast progression of the road works.

## WHEEL MOTOR

1-gear wheel motor. Optional: 2-speed wheel motor, allows working uphill.



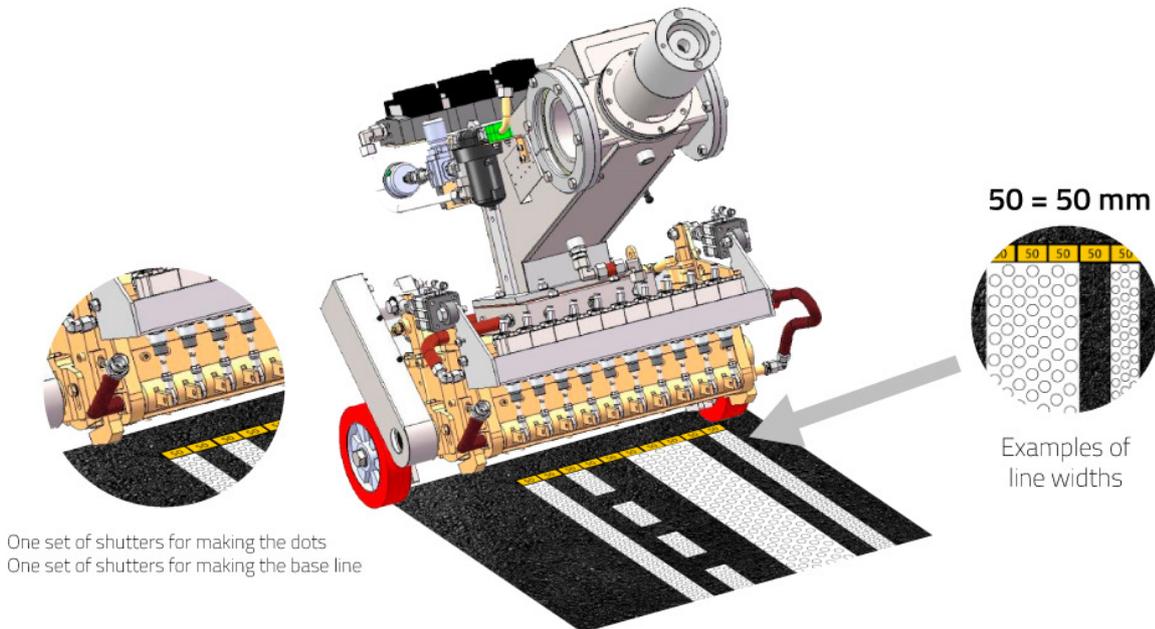
# TECHNICAL SPECIFICATIONS

<b>ENGINE</b>		
Manufacturer	Kubota	
Type	Turbo (Diesel)	
Cooling	Water	
Cylinder	4 stroke 3600 cm <sup>3</sup>	
RatedPower	63 KW	
Approval	EU Stage IIIA resp. TIER 3	
<b>COMPRESSOR</b>		
Compressor Capacity	Choice of 1-2 compressors can give 1800 - 3600 L/min @ 10 bar. Integrated oil-cooling system. Air-cooler incl. water separator	
<b>FILLING CAPACITIES</b>		
Fuel tank capacity	180 L (2 x 90 L) - Diesel	
Hydraulic tank size	93 L	
Bead capacity	330 L (2 x 165 L). Pressurized (max 3 bars)	
<b>MATERIAL TANK</b>		
Material Tank	445 L	
<b>DRIVING PROPERTIES</b>		
Drive angle	10.4 degrees / 18% (5000 kg)	
Turning radius	4.90 m.	
Steering	Dual torque steering	
<b>TRANSMISSION</b>		
Hydrostatic transmission	For variable speed	
Speed	0-22 km/h	
<b>ELECTRICAL SYSTEM</b>		
Electrical system	12 V / 150 Amp	
<b>CONTROL UNIT</b>		
Borum LineMaster	Program up to 99 different line types. Organise lines in up to 30 marking programs. 8" display. Transfer of daily marking reports. Data about road marking jobs can be accessed online (optional).	
<b>COLOUR</b>		
Colour	RAL 1007 (Other colours available on request)	
<b>DIMENSIONS</b>		
Length	5350 mm	
Width	1300 mm	
Height	2250 mm (Without Beacon)	

# THERMOPLASTIC DOT'N LINE EXTRUDER

The Dot'n line system offers a three-in-one solution for thermoplastic markings. This equipment can apply flat lines, dots and unique combination of lines and dots using only one extruder head.

In the drawing you can see examples of different valve set-ups giving different widths. The total line width can be between 30-50 cm depending on the set-up. The line width starts at 5 cm and can be built up to 50 cm with 5 cm standard shutters.



By using two sets of shutters the base line has time to cure slightly before the Dots are applied. Consequently, the Dots will settle on top of the line with sharp edges, securing the optimum retroreflection.

The diameter of dots can be chosen between  $\varnothing 18$  and  $\varnothing 45$  mm depending on the chosen drum. The number of dots/meter is 15-35 dots and is controlled by the LineMaster.

The shutters have no contact with the high tensile steel drum and therefore wear is minimized and lifetime is prolonged.

Effective heating of the complete unit using a centrifugal pump, 42 L/min, hydraulically driven.

Pneumatically controlled quick cleaning system for removal of solids left in the extrusion slot. It can be activated while extrusion is in process and is only slightly detectable on the line in the form of a moderate thickening of the layer.

Continuous circulation of the thermoplastic material inside the equipment. This avoids settling and catching of solid parts and prevents unnecessary wear of mechanical parts.

The application speed depends on the type of application and goes up to 6 km/h.

## AUGER SCREW PUMP WITH CONTINUOUS RECIRCULATION SYSTEM

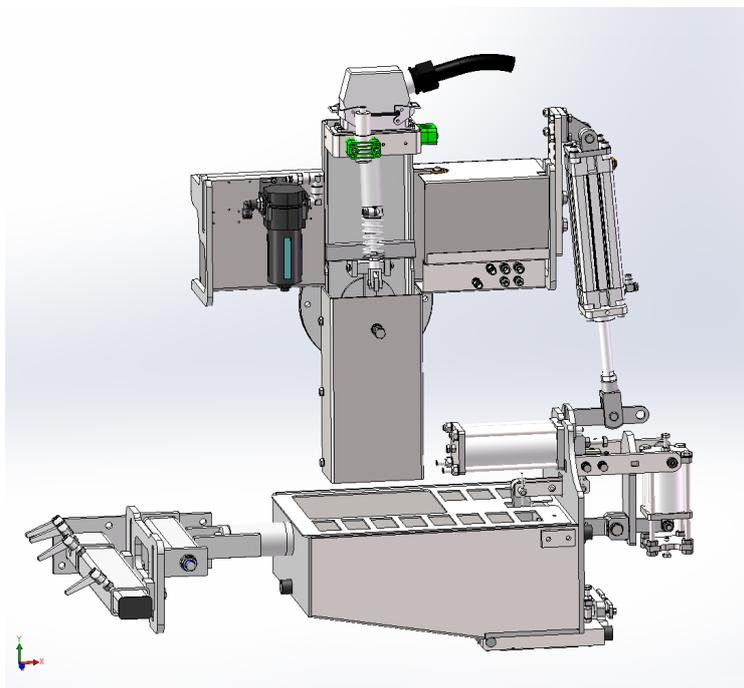
The transport of material from tank to Dot'n'Line head is done by a hydraulically driven auger screw pump, which is electronically controlled. The screw pump has a permanent thermoplastic re-circulation system, which ensures a constant flow also past the inactive extrusion shutters, keeping solid parts from settling and keeping the equipment ready for working.

Build-in pressure regulating system ensures that line width and thickness do not change no matter the number of shutters involved in the current marking assignment.

# THERMOPLASTIC SCREED BOX WITH RIB

## FUNCTION

The screed box can apply flat lines, long flex, and ribs over a line in one pass. The Borum thermoplastic screed box is available in the following widths: 10, 12, 15, 20, 24, 25, 30 cm.



With this type of screed application, the box is dragged with constant contact to the surface. The contact points determine the line width. The material pressure is by gravity only and this is how the material is poured in the marking box. The material coming out of the box will fill up any holes, pores, or other types of road imperfections. This means that material consumption will depend on the road surface.

The screed box equipment is mounted directly on the side of the material tank.

The Borum thermoplastic screed box is available in the following widths: 10, 12, 15, 20, 24, 25, 30 cm. Other sizes are available upon request.

The equipment is constructed with one main application box covering a range of line widths, either 0 - 20 cm or 20 - 30cm. If you do not need to switch the line widths often, you have the option to only change the application opening based on your width requirements instead of changing the whole box! This makes the application equipment more cost-efficient!

The thickness for the application of flat lines is usually between 2 - 4 mm.

The usual application speed for applying ribs over a flat line is 1-3 km/h, while for screed application of flat lines it is up to 5 km/h.

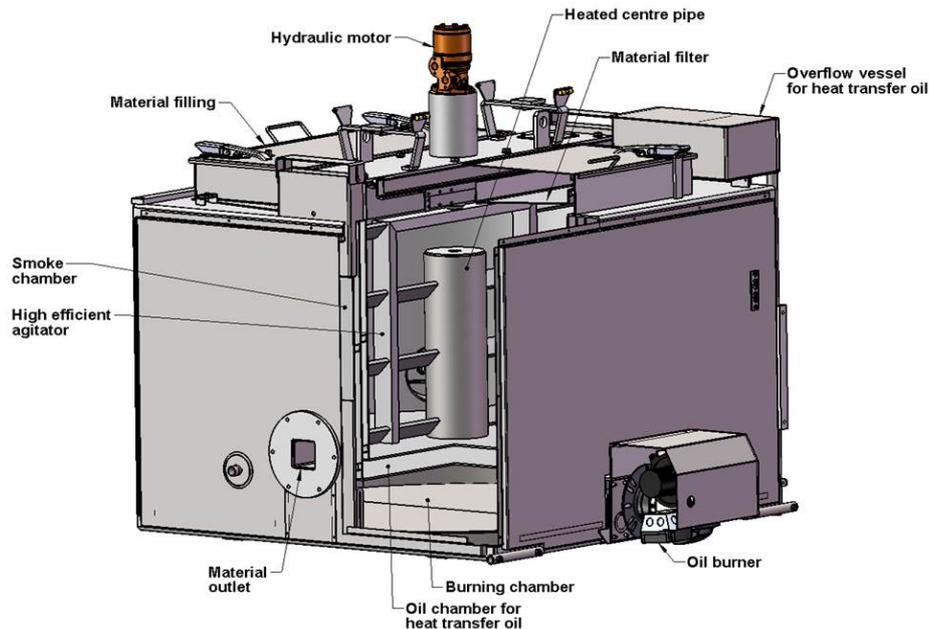
## RIB LINE FUNCTION

The screed box is also equipped with a rib function. This allows you to apply ribs over a line in one pass. The total height of line with rib is usually between 8 to 15 mm depending on the material. The base line is recommended to be as thin as possible when combined with ribs (approx. 1,5 - 2 mm).

## LASER SENSOR FOR MEASURING AND REFILLING MATERIAL

The equipment is supplied with a laser that constantly measures the material level in the application box. If the material level becomes lower than 50%, the application box will be automatically refilled.

# NON-PRESSURIZED THERMOPLASTIC TANK



Non-pressurized thermoplastic tank, indirectly heated via heat transfer oil. The thermal oil and thermoplastic material temperature is thermostatically controlled and regulated automatically according to the settings

## BURNER SYSTEM

Diesel burner system for heating of the thermal oil (and thermoplastic). Propane burner is available on demand.

## VERTICAL AGITATOR (MIXER)

With hydraulic transmission. Heated center pipe for efficient uniform temperature control. Perfect melting & homogenization of the thermoplastic. Stable construction with foundation and bearings at the top of the material tank.

## LINEMASTER FEATURES

The Borum LineMaster control unit is an easy way of setting and controlling your line marking jobs. The LineMaster is attached to the operator's section of the machine and gives you full control of all your line marking tasks, from line application and pre-marking to reporting and invoicing.

It is possible to store up to 99 different line types, and to arrange these in up to 30 different marking programs. You are also able to pre-set line widths, line types and different combinations to have them ready for marking, and can instantly adjust them on the go.



Furthermore, you are able to view the status of various parts of the machine (e.g. compressor) on the computer screen that will help with correctly maintaining the machine and avoiding break downs.

## THERMOPLASTIC MATERIAL ADVANTAGES

Thermoplastic material has a long-life with durability with high retro-reflectivity capabilities due to being able to pre-mix glass beads in the material. Thermoplastic markings cure quickly and adhere strongly to the road surface. Generally, thermoplastic is recommended for areas with high traffic density and/or areas with low lightning as e.g. highways.

The rib line equipment is a good solution if you are only going to work with flat fixed-line width markings and rib line applications.

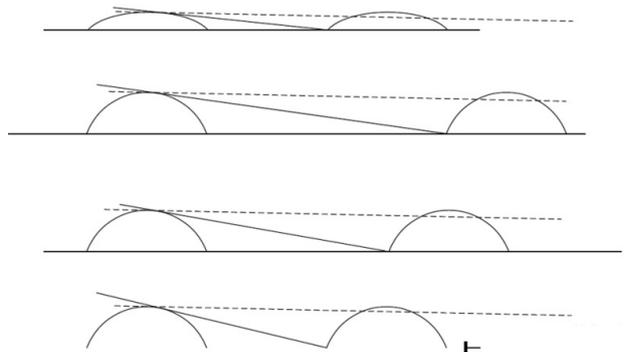


## THERMOPLASTIC DOT ADVANTAGES

Having numerous dots in a line gives the light a lot of possible areas to fall onto and create a retro-reflective effect. This is essential for having clear visibility, especially while driving during night time.

The drainage effect of the profiled markings ensures that rain water will easily drain away from the lines, thus maintaining high reflective values in rainy weather.

This is possible because of the structure that allows the water to drain. Furthermore, the profiled nature of the road marking produces a noise when driven over that will warn the driver against driving off the road.



### TYPICAL USES:

Dot'n line is generally used on roads with high traffic and low night visibility as highways and motorways.



### LEARN MORE

Find out more in the Borum Knowledge Lab.

# ADDITIONAL EQUIPMENT

The additional equipment can be mounted on the machine according to your requirements. They are not necessary for the running of the machine but add to the comfort of the machine driver or to the functionality of the machine.



**Ejector filling of bead tank**



**Pointer turning with steering**  
With hydraulic lifting system



**Fixed pointer**  
With hydraulic lifting system



**Cruise control**



**Sunshade with 1 rotating light**



**Bead alarm mounted on bead gun**



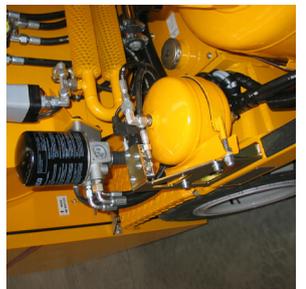
**Remote control for BM Lin-eMaster**



**Cone holder**



**Bar with pneumatic lift for mounting warning lights**  
(Comes without lights)



**Air drier for bead tank**



**BM Online**



**Pre-marking system with paint gun**



**Airknife**



**Pre-marking system with paint can**



**Hydraulic broom**



**Quick shift**